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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/942,806	08/29/2001	Richter A. Rafey	080398.P466	8421

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EXAMINER

LE, VU

ART UNIT	PAPER NUMBER
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2613

DATE MAILED: 07/28/2004

3

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/942,806

Applicant(s)

RAFEY ET AL.

Examiner

Vu Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3, 5-13, 15-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Segen, US 6,072,504.

Re claim 1, Segen discloses a method for generating a depth map used to render objects (fig. 2, Summary Of The Invention) comprising:

establishing a virtual camera (col. 2, line 67 to col. 3, line 8, col. 10, lines 41-54) using camera data of a tracked camera which defines a viewpoint for a synthetic scene (fig. 2, col. 9, lines 7-28, in this segment, actual tracked camera(s) are 120,130 in fig. 2, camera data are ball trajectories, viewpoints, etc..., synthetic scene is the animated version of live action event);

setting the field of view of the virtual camera to the field of view of the tracked camera (col. 10, lines 41-54);

positioning a synthetic tracked object in the scene according to position information of the tracked object (col. 9, lines 29-65);

and extracting depth information of the positioned synthetic tracked object to generate depth map (fig. 3: 225, col. 9, lines 7+, in this segment, the three-dimensional model is the generated depth map).

Re claim 2, the method as set forth in claim 1, wherein the synthetic scene comprises a three dimensional model of an environment (col. 9, lines 7+).

Re claim 3, the method as set forth in claim 1, wherein extracting further comprises extracting depth information of the synthetic scene (col. 9, lines 42-65, in this segment, creating player models from a synthesized composite model is in effect extracting depth information of the synthetic scene).

Re claim 5, the method as set forth in claim 1, wherein establishing further comprises re-positioning the virtual camera as the tracked camera changes (col. 10, lines 7-33, in this segment, tracking live ball and player positions so that an animated i.e., synthesized version of these positions are also being tracked is in effect re-positioning the virtual camera of the tracked camera).

Re claim 6, the limitations as required in claim 6 have been analyzed and rejected with respect to claims 1-5 above.

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Re claim 7, the limitations as required in claim 7 have been analyzed and rejected with respect to claims 1-5 above.

Re claim 8, the method as set forth in claim 6, further comprising combining the synthetic tracked object with the live scene using depth information stored in the depth map (col. 6, lines 28-33, col. 9, lines 20-28, col. 10, lines 34-54, in this segment, an animated version of a live action game can be used in conjunction with a live televised broadcast of the game).

Re claim 9, the method as set forth in claim 8, further comprising using image segmentation to align the depth map in accordance with real edges in the live scene (fig. 3: 230, 235, col. 7, lines 15-67).

Re claim 10, the limitations as required in claim 10 have been analyzed and rejected with respect to claims 1, 6 and 8 above.

Re claim 11, the method as set forth in claim 1, wherein the depth map is further refined by distorting grid coordinates of the depth map based upon characteristics of the tracked camera which defines the field of view (col. 8, lines 1-33, in this segment, interpolating missing data points near or at a point of alteration is in effect a refinement step as claimed).

Re claims 12-13, 15-21, these claims are apparatus corresponding to method claims 1-3, 5-11 above. Thus, they have been analyzed and rejected with respect to claims 1-3 and 5-11. Segen discloses both a method and apparatus (see Summary Of The Invention).

Re claims 22-30, these claims are apparatus corresponding to method claims 1-3, 5-11 above. Thus, they have been analyzed and rejected with respect to claims 1-3 and 5-11. Segen discloses both a method and apparatus (see Summary Of The Invention).

Re claims 31-39, these claims are computer readable medium executed by a processing system to perform the method with steps corresponding to method claims 1-3, 5-11 above. Thus, they have been analyzed and rejected with respect to claims 1-3 and 5-11. Segen discloses both a method and apparatus (see Summary Of The Invention), and also discloses hardware capable of executing software (col. 4, lines 1-21).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Segen, US 6,072,504.

Re claim 4, Segen discloses implementation of the invention to a live action sporting event, but preferably to an environment of a tennis match (fig. 2, also Summary Of The Invention). However, it would have been reasonable to one skilled in the art to expect his invention applicable to an environment of a race track as required in claim 4, since a race track would have encompassed a particular live action sporting event as disclosed in Segen. Therefore, a race track would have fall under an obvious preferential design choice in view of the teaching of Segen.

Re claim 14, the claim pertains to an apparatus claim corresponding to the method claim 4 above. Thus, it has been analyzed and rejected with respect to claim 4. Segen discloses both a method and apparatus (see Summary Of The Invention).

Contact

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vu Le whose telephone number is 703-308-6613. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Kelley can be reached on 703-305-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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